DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE – RAIGAD -402 103
Winter Semester Examination – December - 2019

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Branch: Electronics and Telecommunication Engineering **Sem.:- III**

Subject :- Electronic Devices & Circuits (BTEXC303) **Marks: 60**

Date:- 14/12/2019 **Time:- 3 Hr.**

Instructions to the Students

1. Each question carries 12 marks.
2. Attempt **any five** questions of the following.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately Assume it and should mention it clearly

		(Marks)
Q.1.A)	Draw and explain contraction of n channel JFET and Compare Common source, common drain, and common gate configuration of JFET.	6
B)	Explain the VI characteristics of JFET. What factors are responsible for the shape of the characteristics in a different region?	6
Q.2.A)	Explain n channel enhancement MOSFET and Datasheet for n channel EMOSFET specifies the following parameter, V_{GS}=10V, $I_{D(on)}$=500mA, if $V_{GS(th)}$ for MOSFET is 1 V, determine the drain current for V_{GS}=4V?	6
B)	Explain CMOS invertor with circuits. And draw & explain characteristics of CMOS invertor.	6
Q.3.A)	Compare class A, class B, class AB, class C and class D amplifier.	6
B)	Draw the circuits of voltage series feedback amplifier and derive the expressions for input impedance R_{if}.	6
Q.4.A)	With a neat diagram, explain hardly oscillator and derive an expression for the frequency of oscillation. Find the frequency of oscillation if L1=L2=10 mH and C=0.1 μF.	6
B)	With a neat diagram, explain the RC phase shift oscillator and derive an expression for the frequency of oscillation. And Calculate the value of C1 = C2 for the Wien bridge oscillator to operate at a frequency of 20 kHz. Assume R1 = R2 = 50 k and R3 = 3, R4 = 600?	6
Q.5.A)	Draw and explain internal block diagram of IC 555 and explain the working of Astable multivibrator	6
B)	Draw and explain a Monostable and bistable multivibrator.	6
Q.6.A)	Differentiate SMPS with linear regulated power supply	4
B)	Find the % load regulation of a power supply providing 100V unloaded and 95V at full load.	4
C)	Draw and explain the working principle of IC LM317	4